ABSTRACT OF THE DISCLOSURE

A method for generating single stranded DNA (ssDNA) directly from double stranded PCR (dsPCR) products is described. The method generally entails: (1) amplifying a target polynucleotide by means of two oligonucleotide primers, wherein one primer is capable of hybridizing to the target polynucleotide and the other primer is capable of hybridizing to the complement of the target polynucleotide, and wherein one of the primers comprises a chemical tag, thereby producing an amplification product mixture comprising a tagged amplification product of the target polynucleotide and a complementary non-tagged amplification product; (2) applying the amplification product mixture to a separation medium, wherein the chemical tag is capable of interacting with the separation medium; and (3) eluting the amplification products from the separation medium by means of a mobile phase under denaturing conditions, wherein the interaction between the tag and the separation medium results in the physical separation of the two amplification products.